

WHAT IS CLAIMED IS:

1. A substrate processing apparatus that removes an organic matter from a substrate with use of a removal liquid, comprising:

5 a process chamber directed to an organic matter removal process;
 a holding element to hold a substrate in said process chamber;
 a removal liquid supply element to supply said removal liquid to said substrate held by said holding element; and

10 a light-blocking element disposed in a transport area for said substrate that extends from a cassette to said process chamber, thereby blocking light passing through said transport area into said process chamber, said cassette housing said substrate and allowing at least partially for the transmission of light.

2. The substrate processing apparatus according to claim 1 wherein
15 an optically-closed area enclosing said process chamber is defined in said substrate processing apparatus, and

 said light-blocking element blocks light passing through said transport area into said optically-closed area.

20 3. The substrate processing apparatus according to claim 1 wherein
 said light-blocking element includes a plurality of light-blocking sections that are arranged in a plurality of locations in said transport area, respectively, and are capable of blocking light passing through said transport area into said process chamber, and

 the clearance between said plurality of light-blocking sections is greater than
25 the size of said substrate in the direction of transport of said substrate.

4. The substrate processing apparatus according to claim 2 wherein
said light-blocking element includes a plurality of light-blocking sections that
are arranged in a plurality of locations in said transport area, respectively, and are capable
5 of blocking light passing through said transport area into said process chamber, and
the clearance between said plurality of light-blocking sections is greater than
the size of said substrate in the direction of transport of said substrate.

5. The substrate processing apparatus according to claim 1 wherein
10 said process chamber includes a transfer opening to allow for the passage of
said substrate, and
said light-blocking element includes a light-blocking section to block light
passing through said transfer opening into said process chamber.

15 6. The substrate processing apparatus according to claim 2 wherein
said light-blocking area encloses:
a first process chamber serving as said process chamber directed to said organic
matter removal process;
a second process chamber directed to a process different from said organic
20 matter removal process; and
a substrate transport mechanism to transport said substrate between said first
and second process chamber.

7. The substrate processing apparatus according to claim 1 wherein
25 said process chamber is housed in a predetermined process section,

a first opening to allow for the passage of said substrate is formed in said process section, and a second opening to allow for the passage of said substrate is formed in said process chamber, and

said light-blocking element includes:

5 a first light-blocking section disposed in said first opening to thereby block light passing through said first opening into said process section; and

a second light-blocking section disposed in said second opening to thereby block light passing through said second opening into said process chamber.

10 8. The substrate processing apparatus according to claim 1 wherein said light-blocking element includes an openable shutter.

9. A substrate processing apparatus that removes an organic matter from a substrate with use of a removal liquid, comprising:

15 a process section to define a light-blocking area enclosing a process chamber directed to an organic matter removal process;

a holding element to hold a substrate in said process chamber;

a removal liquid supply element to supply said removal liquid to said substrate held by said holding element;

20 an indexer section including an indexer mechanism to load and unload said substrate with respect to a carrier set at a predetermined position;

a relay section disposed between said indexer section and said process section;

and

a light-blocking element that is disposed in a transport area for said substrate
25 extending from said carrier to said process section, thereby blocking light passing

through said transport area into said process section,

wherein

said relay section includes a transfer mechanism to transfer said substrate between said indexer section and said process section,

5 a first gate section to allow for the passage of said substrate is disposed between said indexer section and said relay section,

a second gate section to allow for the passage of said substrate is disposed between said relay section and said process section,

said light-blocking element includes:

10 a first light-blocking section disposed in said first gate section to thereby block light passing through said first gate section into said relay section; and

a second light-blocking section disposed in said second gate section to thereby block light passing through said second gate section into said process section.

15 10. The substrate processing apparatus according to claim 9 wherein said carrier is a cassette allowing at least partially for the transmission of light.

11. The substrate processing apparatus according to claim 9 wherein said process section comprises:

20 a first process chamber serving as said process chamber;

a second process chamber to perform a process different from said organic matter removal process; and

a substrate transport mechanism to transport said substrate between said first and second process chamber.

12. The substrate processing apparatus according to claim 11 wherein
in said second process chamber there is performed drying process of said
substrate after being subjected to organic matter removal in said first process chamber.

5 13. A substrate processing apparatus that removes an organic matter from a
substrate with use of a removal liquid, comprising:

a process section enclosing a process chamber directed to an organic matter
removal process;

a holding element to hold a substrate in said process chamber;

10 a removal liquid supply element to supply said removal liquid to said substrate
held by said holding element;

an indexer section including an indexer mechanism to load and unload said
substrate with respect to a carrier set at a predetermined position;

a relay section disposed between said indexer section and said process section;

15 and

a light-blocking element that is disposed in a transport area for said substrate
extending from said carrier to said process chamber to thereby block light passing
through said transport area into said process chamber,

wherein

20 said relay section includes a transfer mechanism to transfer said substrate
between said indexer section and said process section,

said light-blocking element includes:

a first light-blocking section that is located between said indexer section and
said relay section and provided in a gate section allowing for the passage of said
25 substrate , thereby blocking light passing through said gate section into said relay section;

and

a second light-blocking section that is disposed in said process chamber and provided in an opening allowing for the passage of said substrate, thereby blocking light passing through said opening into said process chamber.

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14. The substrate processing apparatus according to claim 9 wherein said first and second light-blocking sections include openable first and second shutters, respectively, and

said first and second shutters are so controlled as not to open concurrently.

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15. The substrate processing apparatus according to claim 1 wherein a viewing window for viewing the inside of said process chamber is provided on the wall of said process chamber.

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16. The substrate processing apparatus according to claim 15 wherein an illumination element is provided in the inside of said process chamber, and said illumination element is brought into its active state of executing illumination when said viewing window is opened, and said illumination element is brought into its inactive state of not executing illumination when said viewing window is closed.

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17. The substrate processing apparatus according to claim 16 further comprising:

a window-open prohibiting element to prohibit the opening of said viewing window at least during a period of time that said substrate is processed with said removal

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liquid.

18. The substrate processing apparatus according to claim 16 further comprising:

5 a removal-liquid-supply prohibiting element to prohibit the supply of said removal liquid from said removal liquid supply element at least during a period of time that said viewing window is opened.

19. The substrate processing apparatus according to claim 1 wherein
10 said organic matter to be removed from said substrate is a reaction product caused by the transformation of a resist film formed on said substrate.

20. The substrate processing apparatus according to claim 19 wherein
15 said reaction product is polymer that is formed by performing dry etching of a thin film present on the surface of said substrate with use of said resist film serving as a mask.